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In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Previously Presented) A method for inspecting a wafer, comprising:

positioning a wafer at a fixed station;

aligning an optical system to the wafer, wherein aligning comprises: moving the optical system rotationally as required to locate an edge of the wafer; and moving the optical system to follow the edge of the wafer and locate an alignment feature on the edge of the wafer while the wafer is held linearly and rotationally stationary on the fixed station;

moving the optical system relative to the wafer to inspect a plurality of separate inspection areas on the wafer; and

storing a position of the optical system relative to the wafer while inspecting a plurality of separate inspection areas on the wafer.

2. (Original) The method of claim 1, wherein:

the fixed station is inside a processing apparatus; and

the optical system views the wafer from outside the processing apparatus, through an optical window in the processing apparatus.

3. (Original) The method of claim 1, further comprising:

imaging each of the inspection areas using the optical system; and

rotating images formed by the optical system, wherein each image is rotated by an amount that depends on an orientation of the wafer.

4. (Previously Presented) The method of claim 3, wherein each image is rotated by a different amount according to the orientation of the optical system when the optical system forms the image.

5. (Previously Presented) The method of claim 4, further comprising changing a rotation angle of the image from the optical system while moving the optical system, wherein the changing is such that orientation of features in the image remain constant as the optical system moves.

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6. (Previously Presented) The method of claim 1, wherein the optical system is mounted on a stage and moving the optical system relative to the wafer to inspect a plurality of separate inspection areas on the wafer comprises:

rotating a portion of the stage about a rotation axis of the stage until a linear axis of the stage crosses through a center of a first of the inspection areas; and

moving a portion of the stage along the linear axis of the stage until a distance from the rotation axis of the stage to an objective of the optical system is equal to a distance from the rotation axis of the stage to the center of the first of the inspection areas.

7. (Original) The method of claim 1, wherein aligning the optical system further comprises measuring reflectance of the wafer and locating the edge of the wafer from a drop in the reflectance.

8. (Original) The method of claim 1, wherein after locating the alignment feature on the edge of the wafer, aligning the optical system further comprises processing an image of an area of the wafer using an image recognition module to more precisely determine the orientation of the wafer.

9. (Original) The method of claim 1, further comprising measuring film thickness at the plurality of inspection areas on the wafer.

Claims 10-14 (Cancelled)

15. (Previously Presented) A method for inspecting a wafer, comprising:

holding the wafer in a stationary position;

moving an optical system rotationally relative to the wafer, wherein the rotational movement of the optical system permits the optical system to inspect a plurality of separate inspection areas on the wafer without moving the wafer;

locating an alignment feature on the edge of the wafer, wherein locating the alignment feature comprises moving the optical system to locate an edge of the wafer, and moving the optical system rotationally to follow the edge of the wafer; and

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storing a position of the optical system relative to the wafer while inspecting a plurality of separate inspection areas on the wafer.

16. (Previously Presented) The method of claim 15, further comprising:

moving the optical system laterally relative to the wafer, wherein the rotational movement and lateral movement of the optical system permits the optical system to inspect a plurality of separate inspection areas on the wafer without moving the wafer; and

wherein locating the alignment feature comprises moving the optical system to locate an edge of the wafer, and moving the optical system rotationally and laterally to follow the edge of the wafer.

17. (Previously Presented) The method of claim 15, wherein holding the wafer at a stationary position comprises positioning the wafer on a stationary structure.

18. (Previously Presented) The method of claim 15, further comprising:

imaging each of the inspection areas using the optical system; and

rotating images formed by the optical system, wherein the images are rotated by an amount based on the rotational movement of the optical system relative to the wafer.

19. (Previously Presented) The method of claim 15, wherein moving an optical system rotationally relative to the wafer is performed by rotating an objective lens in the optical system about a rotational axis that does not pass through the objective lens.

20. (Previously Presented) The method of claim 15, wherein locating an alignment feature comprises:

measuring reflectance of the wafer; and

determining a drop in reflectance to locate the alignment feature.

21. (Previously Presented) A method for inspecting a wafer with an optical system, the method comprising:

providing lateral movement of the optical system with respect to the wafer;

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providing relative rotational movement between the optical system and the wafer, wherein the lateral movement and rotational movement permits the optical system to inspect a plurality of separate inspection areas on the wafer;

generating an image signal of at least one inspection area on the wafer using the optical system; and

processing the image signal to produce a rotated image of an inspection area based on the relative angular orientation of the optical system with the wafer.

22. (Previously Presented) The method of claim 21, wherein images of different inspection areas are rotated by a different amount based on the respective relative angular orientation of the optical system with the wafer for each image.

23. (Previously Presented) The method of claim 21, further comprising changing a rotation angle of the image produced by the optical system when there is relative rotational movement between the optical system and the wafer, wherein the act of changing is such that the orientation of features in the image remains constant.

24. (Previously Presented) The method of claim 21, wherein providing relative rotational movement between the optical system and the wafer is performed by rotating an objective lens in the optical system about a rotational axis that does not pass through the objective lens.

25. (New) A method comprising:

providing relative lateral movement between an optical system and a wafer;

providing relative rotational movement between the optical system and the wafer, wherein the rotational movement changes a relative angular orientation of the wafer with respect to the optical system, and wherein the lateral movement and rotational movement permits the optical system to inspect a plurality of separate areas on the wafer,;

generating an image signal of at least one area on the wafer using the optical system; and

processing the image signal of the area on the wafer based on the relative angular orientation of the wafer with respect to the optical system to display a rotated image that preserves a desired orientation of the wafer.

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